

**STATEMENT OF BASIS
PRICE RIVER WATER IMPROVEMENT DISTRICT (PRIWID)
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0021814
UPDES BIOSOLIDS PERMIT NUMBER: UTL0021814
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000000
MAJOR MUNICIPAL**

FACILITY CONTACTS

Person Name: Jeffery R. Richins
Position: District Manager

Person Name: Brian Harris
Position: Wastewater Treatment Plant Superintendent

Facility Name: Price River Water Improvement District
Facility Address: 5382 East Washer Plant Road
Wellington, Utah 84542

Mailing Address: P.O. Box 903
Price, Utah 84501

Telephone: 435-637-8547

DESCRIPTION OF FACILITY

Price River Water Improvement District (PRWID) owns and operates a wastewater treatment facility which serves the communities of Helper, Price, Wellington and the majority of residents within the Price River Valley.

PRWID Wastewater Treatment Plant has an average flow of 1.7 MGD over the last 5 years. The treatment consists of screens, aerated grit chamber, pista-grit removal system, 2 rectangular primary clarifiers, 2 rock media trickling filters, 2 solids contact floc formation basins, 2 activated sludge aeration basins, 2 circular clarifiers, chlorine contact chamber followed by dechlorination with SO₂.

PRWID applies Class B biosolids on its on-farm operation where feed for non-dairy cattle and horses is grown. These biosolids are prepared as follows:

Anaerobic Digestion: 1 primary digester
1 secondary digester

Pathogen Reduction Step: 2 aerated deep facultative sludge basins
sun dried biosolids, land application

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The facility has a maximum wet weather daily design flow of 6 MGD and a max monthly design flow of 4 MGD. However, because the facility has operated steadily for the last 5 years at a monthly average flow of 1.7 MGD, the facility has requested that a chronic flow of 2.2 MGD and an acute flow of 3.0 MGD be used for the development of the Wasteload Analysis (WLA). These flow limits are included in the renewal permit.

The renewal permit contains monthly average and max daily effluent limits for ammonia. The previous permit only contained a daily maximum effluent limit for ammonia.

Influent and effluent monitoring requirements for metals have been reduced from twice yearly to yearly in the renewal permit. This reduction in monitoring is warranted because the last 10 monitoring results have demonstrated that metal concentrations in the effluent are below water quality standards and that the facility does not have a pretreatment program.

Quarterly monitoring requirements for phosphorus, CBOD, nitrate and nitrite are included in the renewal permit. It is expected that the results from this sampling will aide in the development of future renewal permits.

DISCHARGE

DESCRIPTION OF DISCHARGE

PRWID has reported self-monitoring results on Discharge Monitoring Reports on a monthly basis and has a good compliance history. A summary of the last 5 years of data is included as an addendum to this document.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 39° 32' 21" and longitude 110° 42' 44" the discharge is through a 60" pipe on the east side of the facility discharging into the Price River. It is approximately 1 ½ miles southwest of Wellington, on the west side of the Price River and the Denver and Rio Grande Western Railroad tracks, at 5382 Washer\Plant Road, Wellington, Carbon County, Utah.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge flows into the stretch of the Price River. According to the *Utah Administrative Code R317-2-13*, this segment of the Price River is classified as the following:

- | | |
|----------|--|
| Class 2B | -Protected for secondary contact recreation such as boating, wading, or similar uses. |
| Class 3C | -Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain. |
| Class 4 | -Protected for agricultural uses including irrigation of crops and stock watering. |

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), E. coli, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards (*UAC R317-1-3.2*). Oil and grease is based on best professional judgment (BPJ). Ammonia, total residual chlorine (TRC), and dissolved oxygen (DO), are based on Utah water quality standards. The concentration limit for total dissolved solids (TDS) is based directly on the Utah water quality site specific standard for TDS for the stretch of the Price River identified as, “Price River and tributaries from the confluence with Coal Creek to Carbon Canal Diversion” (see footnote (4) under *UAC R317-2-14*). The load limit for TDS is based on the *Price River, San Rafael River, and Muddy Creek TMDLs for Total Dissolved Solids West Colorado Watershed Management Unit, Utah*, which as a site specific criterion is an appropriate TDS loading limit in lieu of the Colorado River Basin Salinity Control Forum Policy requirement as authorized in *UAC R317-2-4*.

The permit effluent limitations are:

Effluent Limitations					
Parameter	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum	Yearly Maximum
Flow, MGD	2.2	NA	NA	3.0	NA
BOD ₅ , mg/L	25	35	NA	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA	NA
TSS, mg/L	25	35	NA	NA	NA
TSS Min. % Removal	85	NA	NA	NA	NA
E-Coli, No./100mL	126	157	NA	NA	NA
Ammonia, mg/L	10	NA	NA	16	NA
TRC, mg/L	0.056	NA	NA	0.076	NA
Oil & Grease, mg/L	NA	NA	NA	10	NA
Dissolved Oxygen, mg/L	NA	NA	5.0	NA	NA
pH, Standard Units	NA	NA	6.5	9.0	NA
TDS, mg/L	NA	NA	NA	1700	NA
TDS, (annual) tons ^b	NA	NA	NA	NA	7304
WET, Acute Biomonitoring	NA	NA	NA	NA	Pass at 100% Effluent

NA – Not Applicable

SELF-MONITORING AND REPORTING REQUIREMENTS

Self-monitoring requirements are shown in the table below. The permit will require reports to be submitted monthly on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Parameter	Frequency	Sample Type	Units
Total Flow ^{c,d}	Continuous	Recorder	MGD
BOD ₅ , Influent ^e Effluent	2 x Weekly	Composite	mg/L
	2 x Weekly	Composite	mg/L
TSS, Influent ^e Effluent	2 x Weekly	Composite	mg/L
	2 x Weekly	Composite	mg/L
E-coli	2 x Weekly	Grab	No./100mL
Ammonia	2 x Weekly	Grab	mg/L
TRC	Daily	Grab	mg/L
WET, Acute Biomonitoring ^f	2 x Year	Composite	Pass/Fail
Oil & Grease	2 x Weekly	Visible	Yes/No
Oil & Grease ^g	Monthly	Grab	mg/L
Dissolved Oxygen	2 x Weekly	Grab	mg/L
pH	2 x Weekly	Grab	su
TDS	Monthly	Grab	mg/L
Metals ^{e, i} , Influent Effluent	Yearly	Composite ^h	mg/L
	Yearly	Composite ^h	mg/L
Organic Toxics ^j	2 nd & 4 th year of permit	Grab	mg/L
Phosphorus	Quarterly	Grab	mg/L
CBOD	Quarterly	Grab	mg/L
Nitrate	Quarterly	Grab	mg/L
Nitrite	Quarterly	Grab	mg/L

- a See Definitions, *Part VIII*, for definition of terms within the effluent limitations tables and the self-monitoring and reporting requirements tables.
- b The measurement of TDS tons will be total accumulated during the calendar year. Beginning in January 1, of each year the total TDS tons will start at zero again.
- c Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- d If the rate of discharge is controlled, the duration of that rate shall be reported also.
- e For this constituent, in addition to monitoring the final discharge, influent samples shall be taken and analyzed at the same frequency as required in the discharge.
- f Wet monitoring will be acute according to *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fourth Edition. August 1993, EPA/600/4-90/027F* as per 40 CFR 136.3(a) TABLE 1A-LIST OF APPROVED BIOLOGICAL METHODS, and the *Region VIII EPA NPDES Acute Test Conditions – Static Renewal Whole Effluent Toxicity Test (August, 1997)*. The permittee shall use Ceriodaphnia dubia the first 6 months and Pimephales promelas (fathead minnow) the next 6 month period. Each year the permittee will change the order the species so that the species are not tested in the same half of the year each year.

- g Monitoring and reporting the results of a laboratory analyzed sample for oil & grease is not required unless the visual sample produces a positive result.
- h Samples of mercury can be taken as composite or grab.
- i Metals samples shall conform to the requirements in the table titled “Metals Monitoring for Pretreatment Program” found in Part II.A.1.
- j A total toxic organics (TTO) test shall be performed sometime during the 2nd and 4th year of the permit.

BIOSOLIDS

DESCRIPTION OF TREATMENT AND DISPOSAL

The solids (sewage sludge) at the PRWID are stabilized in primary and secondary anaerobic digesters with a hydraulic residence time of about 40 days and a temperature of 98° F (36.7° C). After digestion, the biosolids are transferred to one of two facultative lagoons for a period of one to three years for additional stabilization. After this time period, one of the two lagoons is allowed to dry out for approximately one year and the biosolids are scooped out with a front end loader, and loaded onto a dump truck. The biosolids are hauled to a local farm, and land applied at agronomic rates (based on nitrogen) to produce hay or grain for livestock feed.

In 2011 the PRWID disposed of 190 DMT of Class B biosolids to agricultural fields owned by Glen Wells for the production of sorghum for livestock feed. In the fall of 2012 Class B biosolids will once again be land applied to the Glens Wells property at agronomic rates for alfalfa.

FUTURE DISPOSAL METHODS

The PRWID plans to treat and dispose of their biosolids in the same basic manner for the next five years. The only changes that may be made, is whose property the biosolids are land applied on, and the type of cover crop grown on the property.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1)*, the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring Based Upon Dry Metric Tons (DMT)	
Amount of Biosolids Produced Per Year	Monitoring Frequency
> 0 to < 290 DMT	Once Per Year
> 290 to < 1,500 DMT	Four Times Per Year

In 2011, the PRWID produced a total of 190 DMT of biosolids, therefore the PRWID was required to sample at least once. If the PRWID produces and disposes of more than 290 DMT of biosolids in one year, they will be required to sample four times a year.

BIOSOLIDS LIMITATIONS

Heavy Metals

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of 40 CFR 503.13 is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see Part III. D. 11. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the PRWID, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of 40 CFR 503.13, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

The maximum heavy metals listed in *Table 1* and the heavy metals loading rates in *Table 2*; or

The maximum heavy metals in *Table 1* and the monthly heavy metals concentrations in *Table 3*.

If the biosolids do not meet these requirements they cannot be land applied.

40 CFR, 503.13, Tables 1, 2, and 3 of Heavy Metal Limitations

Heavy Metals	Table 1	Table 2	Table 3 (Considered Exceptional Quality)
All heavy metals concentrations shall be measured and reported	Daily Maximum mg/Kg <u>a/b/c/</u>	Cumulative Loading Rate Kg/Ha <u>a/</u>	Monthly Average Concentration mg/Kg <u>a/b/c/d/</u>
Total Arsenic	75	41	41
Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A

Total Nickel	420	420	420
Total Selenium	100	100	100
Total Zinc	7500	2800	2800

- a/ See Part VIII. of the permit for definition of terms.
- b/ The limitations represent the maximum allowable levels of heavy metals in any biosolids intended for land application.
- c/ Any violation of these limitations shall be reported in accordance with the requirements of *Part III .H., 1, 2, 3 and 4* of the permit.
- d/ These limitations represent the maximum allowable levels of heavy metals based on an average of all samples taken during a 30-day period.

Pathogen Limitations

Class B Requirements for Agriculture and Land Reclamation Use

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). The PRWID may achieve Class B biosolids in one of two different ways with regards to pathogens:

1. Under *40 CFR 503.32 (b)(2)*, the PRWID may test the biosolids and must meet a microbiological limit of less than 2,000,000 MPN of fecal coliform per gram for the biosolids to be considered Class B biosolids with respect to pathogens.
2. Under *40 CFR 503.32 (b)(3)* the PSRP may be accomplished through anaerobic digesters that have a minimum retention time of 15 days at 95° F (35° C) or 60 days at 68° F (20° C).

Vector Attraction Reduction

If the biosolids are land applied PRWID will be required to meet a method of vector attraction reduction under *40 CFR 503.33*. The PRWID needs to meet the vector attraction reduction requirement below.

Under *40 CFR 503.33(b)(1)*, the solids need to be treated through anaerobic digestion for at least 15 days at a temperature of a least 35° C (95° F) with a 38% reduction of volatile solids.

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

METALS MONITORING DATA

The PRWID was required to sample for metals at least once in 2011. The monitoring data shows the metals met *Table 3* of *40 CFR 503.13*. Therefore the PRWID biosolids qualify as Exceptional Quality (EQ) with regards to metals.

The monitoring data is below.

Metals Monitoring Data 2011

Heavy Metals	PRWID 2011, Yearly Average, mg/Kg	PRWID 2011, Yearly Maximum, mg/Kg	40 CFR 503.13, Table 3, (Exceptional Quality) mg/Kg
Arsenic	15.3	15.3	41.0
Cadmium	2.12	2.12	39.0
Copper	444.0	444.0	1,500.0
Lead	55.4	55.4	300.0
Mercury	3.83	3.83	17.0
Molybdenum	6.96	6.96	75.0
Nickel	20.9	20.9	420.0
Selenium	13.1	13.1	36.0
Zinc	969.0	969.0	2,800.0

PATHOGEN MONITORING DATA The PRWID was not required to monitor the anaerobic biosolids for pathogens because PRWID met a PSRP. Therefore, there is not any monitoring data for the Class B biosolids. All biosolids land applied in 2011 met the Class B pathogen standards through anaerobic digestion.

REPORTING AND RECORD KEEPING REQUIREMENTS

Record keeping

The record keeping requirements from 40 CFR 503.17 are included under Part III.H. of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the Class A metals limitations of Table 3 of 40 CFR 503.13, and are sold or given away and land applied the records must be retained for a minimum of five years. If the biosolids do not meet Class A standards with regards to heavy metals, and meet Class B standards and are land applied, the records must be maintained perpetually. If the biosolids are disposed in a landfill the records must also retained for a minimum of five years.

Reporting

The PRWID must report annually as required in 40 CFR 503.18. This report is to include the results of all monitoring performed in accordance with Part III.C. of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than **February 19** of each year. Each report is for the previous calendar year.

STORM WATER

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000 (MSGP). All sections

of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include: 1. The development of a pollution prevention team: 2. Development of drainage maps and materials stockpiles: 3. An inventory of exposed materials: 4. Spill reporting and response procedures: 5. A preventative maintenance program: 6. Employee training: 7. Certification that storm water discharges are not mixed with non-storm water discharges: 8. Compliance site evaluations and potential pollutant source identification, and: 9. Visual examinations of storm water discharges.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

Although the permittee does not have to develop a State-approved pretreatment program, any wastewater discharges to the sanitary sewer are subject to Federal, State and local regulations. Pursuant to *Section 307 of the Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge, the permittee must resubmit an IWS no later than sixty days prior to the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is required, as per *UAC R317-8-8.8(4)(c)*, that the permittee submit for review and public notice any local limits that are developed to the Division of Water Quality for review.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3* and *Water Quality Standards, UAC R317-2-5* and *R317-2-7.2*.

Since the permittee is a major municipal discharger, the renewal permit will require acute whole effluent toxicity (WET) testing and limits.

The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

The receiving stream water quality monitoring data indicate no impairment of the stream. Therefore, there will be no numerical toxicity limitation and no chronic testing required at this time.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Kim Shelley, Discharge
Mark Schmitz, Biosolids
Utah Division of Water Quality

PUBLIC NOTICE

Began:
Ended:
Public Noticed in